

EcoLogo^{CM} Program Certification Criteria Document

CCD-082
Toilet Tissue



Introduction

The EcoLogo^{CM} Program is designed to support a continuing effort to improve and/or maintain environmental quality by reducing energy and materials consumption and by minimizing the impacts of pollution generated by the production, use and disposal of goods and service.

North Americans, who comprise only seven percent of the world's population, consume nearly half of the world's tissue paper products. Every year, North Americans use about 50 pounds (22.4 kg) of tissue products per person. Pulp and paper mills consume significant quantities of energy and natural resources and may release substances which contaminate water and air in the receiving environment and which enter the solid waste stream. Alternatives are available to manufacturers in the choice of pulp furnish, pulp and paper technology and emission control to mitigate adverse environmental impacts.

Based on a review of currently available life cycle information, the product category requirements will produce an environmental benefit through resource and energy conservation and reductions in harmful emissions to natural water bodies, air and land.

A requirement for a minimum content of recycled material is not specified in this guideline. This parameter has been incorporated into the calculation of resource consumption and solid waste production. Performance in these areas improves as the amount of recycled material increases. Products containing low amounts of recycled material are unlikely to qualify for certification.

Life cycle review is an ongoing process. As information and technology change, the product category requirements will be reviewed and possibly amended.

Notice

Any reference to a standard means to the latest edition of that standard.

The EcoLogo^{CM} Program reserves the right to accept equivalent test data for the test methods specified in this document.

Notice of Intent

It is the intent of the EcoLogo^{CM} Program to amend this document with a requirement that all primary wood fiber be obtained from forests that are certified as sustainably managed, when an appropriate certification program becomes available.

Interpretation

1. In this criteria document:

"COD" (chemical oxygen demand) means the mass concentration of oxygen equivalent to the amount of dichromate consumed by dissolved and suspended matter when a water sample is treated with that oxidant in accordance with one of the following methods:

- ISO 6060, "Water quality - Determination of the chemical oxygen demand", or
- Method 5220 C or D in "Standard Methods for the Examination of Water and Wastewater", 17th Edition, American Public Health Association, American Water Works Association and Water Pollution Control Federation, 1989, Washington, DC;

"chlorine bleaching plant" means a plant in a mill where pulp is bleached by chlorine or chlorine dioxide;

"component pulp" means a pulp that is used in the manufacture of toilet tissue and that is produced at an off-site facility;

"corporate code of sustainable forest practices" means a statement of practices which has the objective of maintaining environmental, economic, and social values of the forest. The code must specify, at a minimum, harvesting practices, forest regeneration, biodiversity and wildlife protection, soil conservation, watershed protection, and the participation of communities in forest planning;

"effluent" means waste water from a mill, including process water, gas scrubbing water, boiler blow-down water, washdown water, cooling water and leachate from any site at the mill where solid residues generated by any mill are treated or disposed of or where wood chips or hogfuel is stored;

"measurable concentration of 2,3,7,8-TCDD" means a concentration of 2,3,7,8-TCDD that is greater than the level of quantification (10 ppq) when tested using one of the following methods:

- Method 1613 Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS in "Guidelines Establishing Test Procedures for the Analysis of Pollutants"; US Environmental Protection Agency, October 1994, or
- Report EPS 1/RM/19, "Reference Method for the Determination of Polychlorinated Dibenzo-para-dioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) in Pulp Mill Effluents", Environment Canada, 1991;

"measurable concentration of 2,3,7,8-TCDF" means a concentration of 2,3,7,8-TCDF that is greater than the level of quantification (10 ppq) and that when multiplied by 0.1, exceeds 5 ppb, when tested using one of the following methods:

- Method 1613 Tetra- through Octa-Chlorinated Dioxins and Furans by Isotope Dilution HRGC/HRMS in "Guidelines Establishing Test Procedures for the Analysis of Pollutants"; US Environmental Protection Agency, October 1994, or
- Report EPS 1/RM/19, "Reference Method for the Determination of Polychlorinated Dibenzo-para-dioxins (PCDDs) and Polychlorinated Dibenzofurans (PCDFs) in Pulp Mill Effluents", Environment Canada, 1991;

"**NOEC**" (no-observable-effects-concentration) means the highest concentration of a test material to which organisms are exposed, in which the response is found, by some statistical test, not to be different from the control response;

"**post-consumer material**" means a product which has served its end-use at the consumer level, has been discarded by the consumer, and would, unless diverted, enter the waste stream;

"**pre-consumer material**" means materials generated by an industrial process that would, unless diverted, enter the waste stream. This includes, but is not limited to, damaged or defective materials, overstock or obsolete inventories from manufacturers, distributors, wholesalers and trimmings from converting processes. It does not include wet or dry broke;

"**primary wood fiber**" means fiber from wood that has not previously been pulped;

"**printed recovered material**" means material that has been printed and/or coated and would, unless diverted, enter the waste stream;

"**recycled material**" means post-consumer material and pre-consumer material. It does not include by-products of an industrial process that can be, and regularly are, used in either the same process, or in a different process, except that proportion which originated as post-consumer material and pre-consumer material. It may include sawdust or planer shavings from sawmill operations; and

"**TEF_{sub}**" means sublethal toxicity emission factor. It is calculated as $TEF_{sub} = [\log (100/IC_{25\text{ mean}})] \times [\text{annual mill effluent flow in m}^3] \div [\text{annual mill tonnage in ADMT}]$. Toxicity shall be measured using two different species of divergent taxonomic and ecological ranks. These species should be physiologically and ecologically similar to organisms that reside in North American ecosystems. Listed below are acceptable methods.

- Testing on an aquatic vertebrate species using **one** of the following:
 - EPA-821-R02-012, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Estuarine and Marine Organisms" (*Menidia beryllina*), US Environmental Protection Agency, 2002; **or**
 - EPA-600-R95-136, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms", US Environmental Protection Agency, 1995; **or**
 - Report EPS 1/RM/22, "Biological Test Method: Test of Larval Growth and Survival Using Fathead Minnows", Environment Canada, 1992.

- Testing on an aquatic invertebrates species using **one** of the following:
 - EPA-821-R02-013, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to Freshwater Organisms" (*Ceriodaphnia dubia*), US Environmental Protection Agency, 2002; **or**
 - EPA-600-R95-136, "Short-Term Methods for Estimating the Chronic Toxicity of Effluents and Receiving Waters to West Coast Marine and Estuarine Organisms", US Environmental Protection Agency, 1995; **or**

- Report OECD/OCDE-211, “*Daphnia magna* Reproduction Test”, Organization for Economic Cooperation and Development, September 1998; **or**
- Report EPS 1/RM/2, “Biological Test Method: Test of Reproduction and Survival Using the *Cladoceran Ceriodaphnia dubia*”, Environment Canada, 1992; **or**
- Report EPS 1/RM/27, “Biological Test Method: Fertilization Assay Using Echinoids (Sea Urchins and Sand Dollars)”, Environment Canada, 1992.

Category Definition

2. This category includes all toilet tissue.

General Requirements

3. To be authorized to carry the EcoLogo^{CM}, the toilet tissue must:
 - (a) meet or exceed all applicable governmental and industrial safety and performance standards; and
 - (b) be manufactured and transported in such a manner that all steps of the process, including the disposal of waste products arising therefrom, will meet the requirements of all applicable governmental acts, by laws and regulations.

Notice: Toilet tissue manufactured at facilities operating under any authorization, including transitional authorization to be exempt from any of the requirements of all applicable governmental acts, bylaws and regulations will not be eligible for certification.

Product Specific Requirements

4. To be authorized to carry the EcoLogo^{CM} the toilet tissue must:
 - (a) be manufactured so that the total of load points assessed for Resource Consumption, Energy Consumption, COD, TEF_{sub}, and Net Solid Waste as determined from the Table in Appendix 1, does not exceed 4;
 - (b) be manufactured so that the effluent from the paper mill or any mill which produces a component pulp, if such mills operate a chlorine bleaching plant, does not contain a measurable concentration of 2,3,7,8-TCDD or a measurable concentration of 2,3,7,8-TCDF; and
 - (c) if manufactured from pulp made from primary wood fiber, use only pulp derived from forests that may be demonstrated to be managed under a corporate code of sustainable forest practices.

Verification

5. To verify a claim that a product meets the criteria listed in the document, the EcoLogo^{CM} Program will require access, as is its normal practice, to relevant quality control and production records and the right of access to production facilities on an announced basis.
6. Compliance with section 3(b) shall be attested to by a signed statement of the Chief Executive Officer or the equivalent officer of the manufacturer. The EcoLogo^{CM} Program shall be advised in writing immediately by the licensee of any non-compliance which may occur during the term of the license. On the occurrence of any non-compliance, the license may be suspended or terminated as stipulated in the license agreement.

Conditions for EcoLogo^{CM} Use

7. The EcoLogo^{CM} may appear on wholesale or retail packaging, or on the product itself, provided that the product meets the requirements in this guideline.
8. It is recommended that a criteria statement appear with the EcoLogo^{CM} whenever the EcoLogo^{CM} is used in association with the toilet tissue. The intent of this statement is to provide clarification as to why the product was certified and to indicate constraints to which the certification is limited. This is to ensure no ambiguity over, or misrepresentation of, the reason(s) for certification.

The suggested criteria statement wording for this product type is "Toilet Tissue". The licensee may propose other wording for the criteria statement, but any such proposed wording must be approved by the EcoLogo^{CM} Program.

9. All licensees and authorized users must comply with the Program's *Guide to Proper Use of the EcoLogo^{CM}* regarding the format and usage of the EcoLogo^{CM}.
10. Any accompanying advertising must conform with the relevant requirements stipulated in this guideline, the license agreement and the Program's *Guide to Proper Use of the EcoLogo^{CM}*.

**For additional copies of this criteria document or for more information about the
EcoLogo^{CM} Program, please contact:
TerraChoice Environmental Marketing Inc.
Toll free: 1-800-478-0399, Telephone: (613) 247-1900, Email: ecoinfo@terrachoice.com**

Appendix 1: Environmental Parameters and Load Points for Toilet Tissue

Parameter	Load Points				
	0	1	2	4	8
Resource consumption (tonnes/tonne)	< 0.05	0.05 to 0.2	0.2 to 0.8	0.8 to 1.1	> 1.1
Energy consumption (GJ/tonne)	< 24	24 to 27	27 to 40	40 to 52	> 52
COD (kg/tonne)	< 5	5 to 15	15 to 40	40 to 60	> 60
TEF _{sub} (units TEF _{sub})	< 50	50 to 100	100 to 150	150 to 200	> 200
Net solid waste (tonnes/tonne)	< -1.3	-1.3 to -0.6	-0.6 to -0.2	-0.2 to 0.1	> 0.1

The process used to qualify products for EcoLogo^{CM} certification in this criteria document is based on a matrix of five environmental parameters, each with a range of values based on actual industry performance. Each level of performance is assigned a load point value. Points are totalled over all parameters. Products with different environmental profiles will be able to qualify for the EcoLogo^{CM}. The allowable number of points has been set so that, while tradeoffs between parameters is possible, very poor performance in any one parameter will disqualify a product.

The parameters used to evaluate sanitary paper products for EcoLogo^{CM} certification are based on the most significant environmental impacts associated with specific areas of the product life cycle, namely the production and processing of pulp and paper. The parameters relate to resource consumption (materials and energy) and emissions (toxicity and wastes).

The five specific parameters used are described in the following paragraphs:

1. **"Resource Consumption"** is calculated as metric tonnes of resource consumed per metric tonne of sanitary paper produced. It includes all fibrous materials consumed in pulp and paper making (wood and wood chips, manufacturing residues and post-consumer fiber) and non-fibrous additives such as fillers, wet strength agents and sizing which are added to be retained in the finished product. It excludes hog fuel and the combustible organic content of spent pulping liquor that is burned, and all bleaching and process chemicals. Different fiber resource inputs are weighted according to the following factors:
 - post-consumer material 0
 - printed recovered material 0
 - sawdust, planer shavings 0.33
 - pre-consumer material 0.75
 - whole logs 1
 - wood chips 1

2. **"Energy Consumption"** means the energy used to produce a metric tonne of sanitary paper, including the production of wood chips, major process chemicals, the net energy consumption at pulp and paper mills (energy purchased and generated less sales), and off-site treatment facilities. It excludes energy consumed in mining and forestry operations, all transportation energy, and that portion of the energy derived from combustion of biomass (bark, sawdust, etc.).
3. **"Chemical Oxygen Demand (COD)"** represents the total organic chemical loading from aqueous effluent per metric tonne of sanitary paper produced. It includes biochemical oxygen demand (BOD) and organic suspended solids.
4. **"Sublethal toxicity"** is an indicator of the toxicity of mill effluent to aquatic organisms. It is measured in units of toxicity emission factor (TEF_{sub}). Units of TEF_{sub} are added for pulp and paper production for mills that discharge directly to natural water courses. No TEF_{sub} load points are assigned to mills that discharge to an off site treatment facility.
5. **"Net Solid Waste"** reflects both quantities diverted from and directed to the solid waste stream per metric tonne of sanitary paper produced. It represents the gross weight of solid waste from paper production, including the production of component pulps, less the weight of various types of recovered fiber inputs used in pulp and paper production. The weights are multiplied by a factor for each type of recovered fiber as follows:
 - post-consumer material 1
 - printed recovered material 1
 - sawdust, planer shavings 0.67
 - pre-consumer material 0.25
 - whole logs 0
 - wood chips 0

Note that the use of recovered fiber is credited in the calculation of load points for both the resource utilization and net solid waste parameters. This is due to the fact that sanitary paper products represent the final use of the fiber and, unlike most other types of paper products, are not normally recovered for recycling purposes.